

NWC  
35P  
91-4  
archival

**THE DRUG WAR ON THE SOUTHWEST BORDER: WHAT ROLE 'HIGH TECH'?**

Mr. James Cason, State Department  
LTC Richard Cowell, USA  
LtCol. John Kugler, USAF

National War College  
May 1, 1991

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>01 MAY 1991</b>		2. REPORT TYPE <b>N/A</b>		3. DATES COVERED <b>-</b>	
4. TITLE AND SUBTITLE <b>The Drug War on the Southwest Border: What Role 'High Tech'?</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>National Defense University Fort McNair, Washington, DC 20319</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release, distribution unlimited</b>					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>UU</b>	18. NUMBER OF PAGES <b>54</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

### Introduction to the Study:

This study focuses on the potential uses of new technologies on the Southwest border to detect narcotics traffickers and illegal aliens. Specifically, the authors of the assessment--all students at the National War College--were asked by the Immigration and Naturalization Service to evaluate the possible role of remotely piloted vehicles and unmanned ground vehicles equipped with modern sensors in the effort to control the U.S.-Mexican border in the 218-mile Tucson sector patrolled by the United States Border Patrol.

In carrying out this assessment, the authors traveled to Huntsville, Alabama, to discuss current sensor technology with the U.S. military's Joint Project Office charged with developing sensors and appropriate ground and air platforms. They also visited the El Paso Intelligence Center run by the Department of Justice at Fort Bliss. While in El Paso, they also talked with officials at Operation Alliance, tasked with coordinating anti-drug efforts along the Southwest border, and with Joint Task Force Six (JTF-6), a military liaison unit at Fort Bliss whose function is to coordinate military assistance to anti-narcotics units along the Southwest border. One member of the team traveled to Mexico City for talks with Embassy officials and the resident Immigration and Naturalization Service Agent in Charge to discuss Mexican reactions to enhanced sensor deployment. The study team also traveled twice during a six week period to Tucson, Arizona, for talks with Drug Enforcement officials and the Border Patrol.

While in Arizona they had occasion to discuss Border Patrol operations with supervisors as well as dozens of agents at all levels of the organization. In addition to lengthy conversations with Border Patrol intelligence agents, communications specialists, maintenance personnel, and patrolmen, the authors spent five hours each day and night with enforcement agents, accompanying them to the field in vehicles, on horseback and in helicopters. They also spent many hours with the

Nogales station sensor management agents as they monitored sensors and television surveillance cameras during hours of peak activity. During six days in Tucson and Nogales the authors had ample opportunity to discuss Border Patrol operations, tactics and equipment and to obtain detailed descriptions about how the Border Patrol employs sensors and other technology in its daily operations. The authors were able to discuss new sensor technology with the agents and obtain their views regarding what technology would most help the Border Patrol save manpower and better carry out its assigned anti-narcotics and illegal alien missions.

### **Principal Findings**

A significant proportion of the illegal drugs and aliens entering the United States crosses the 2,000-mile Southwest border that stretches from Texas through New Mexico, Arizona, and California. Because of a lack of strategic intelligence, there are no accurate statistics of how many people and how much narcotics enter the U.S. annually across our southwestern border. Over 40 federal agencies have some role in the anti-narcotics struggle at the border, but there is no overall direction to this effort. There is no central command and control over the myriad agencies at the federal, state and local level involved in anti-narcotics work, and too often there is little real tactical coordination. Serious rivalries and jealousies prevent coordination of effort or sharing of resources, even though task forces try to work together in some areas. All agencies suffer from a lack of adequate funding, and the enforcement agents are overworked and under-compensated.

Operation Alliance has assigned the Border Patrol the principal task of patrolling between official ports of entry for narcotics. While they are the lead agency and interdict most of the drugs crossing the border, the Border Patrol is not apprehending most of the traffickers and drugs entering the United States. They employ Vietnam-era technology, and their sensors are inadequate in number and insufficiently discriminating to make up for personnel shortfalls. Low-cost sensors

that can do a better job of detecting illegal entrants exist, but the Border Patrol has not purchased them. The new sensors purchased in recent years have been uniformly deficient and, in practice, unusable.

We believe the Border Patrol should correct its technological deficiencies as quickly as possible if it is to make more of an impact in the war on drugs. In particular, more fixed "discriminating" sensors and simple, inexpensive unmanned ground vehicles (UGVs) using the latest sensor technology can save the Border Patrol manpower and help it detect and apprehend more drug traffickers and illegals carrying narcotics. We see little role at present for remotely piloted vehicles (RPVs)--manned aircraft are adequate and far cheaper than RPVs.

In our opinion, the Border Patrol, assisted by the numerous laboratories of the Department of Defense, should order and test a prototype UGV in the Tucson Border Patrol sector. Based on our observations, such a mobile sensor platform will supplement the current fixed stock of sensors, will be a force multiplier, and can help the Border Patrol make better use of its limited manpower. Only limited amounts of training would be required to employ the UGVs we recommend. Used in conjunction with better television surveillance equipment, secure communications, and better strategic intelligence, these new generation sensors can help stem the flow of illegal drugs and those who carry them into the United States. With a more discriminating sensor network, the Border Patrol could place more of its agents along high density urban entry points, thus flushing traffickers and illegal aliens into the rural flanks where--at least in Arizona--the authorities would have more time than they do in the towns to apprehend border crossers seeking the safety of main roads.

We believe that the Mexican government would object less to the employment of enhanced sensors than to alternatives such as better fencing and border obstacles. If our Embassy in Mexico informed Mexican authorities quietly and in

advance of any deployment of the enhanced sensors, they would be unlikely to raise objections. We should inform Mexican Officials that the sensors are to detect drug traffickers and we should consider offering Mexico the chance to buy unclassified versions for use on their own Southern border with Guatemala if they wish.

While we recommend greater use of off-the-shelf technology, it is apparent that our political leaders do not have the political will to control our borders. Unless we go beyond lip service to the "war on drugs" and provide funds to implement a total border control strategy, the prospect for ending trafficking in drugs and illegals is bleak. Better technology can lead to more seizures for a particular agency or in a specific Border Patrol sector, but the overall war will not be won even if battles are more efficiently fought on parts of the front.

#### **THE SOUTHWEST BORDER: OVERVIEW OF THE THEATER OF OPERATIONS**

For political reasons and because of the facts of geography the 1950-mile land border separating Mexico and the United States is truly "open." Meandering through cities, deserts and inhospitable mountain ranges, this border is marked in most places by several strands of rusting barbed wire and periodic official boundary markers. Cattle gates of varying degrees of sophistication provide crossing opportunities at many places along the border, particularly where a person or business owns contiguous land in Mexico and the United States. Only in the towns that straddle both sides of the "line" are there physical barriers such as fences to channel border traffic into one of the 28 official ports of entry. Except for occasional and insufficient lighting on the U.S. side of these towns, most of the border is not illuminated. On both sides of the border there exists an extensive network of paved and unpaved local and feeder roads that connects the border to major inland cities. Many of the unpaved roads were originally built to facilitate smuggling.

Half of the land on the U.S. side of the border is public, managed by the Bureau of Land Management (BLM), the National Park Service, the Forest Service, and myriad other agencies. However, the mix of private and public lands varies by state. The Texas border is only ten percent public property, while 95 percent of the Arizona line runs through public land or Indian reservations.. Hundreds of county governments have alternating jurisdiction along the border in addition to the 41 United States Government ( USG) agencies with border responsibilities. Texas alone has over a dozen border counties. In all, some 17,000 local, state and federal law enforcement agents work in border counties, but their primary focus is on criminal activity, not apprehending illegal aliens.

### **Smuggling: A Way of Life**

Smuggling is an accepted way of life in many border communities. The tradition dates from centuries of providing services and goods in demand on the other side. Often members of the same extended families live on both sides of the border zone, which includes 30-40 million people extending back a hundred miles, and Spanish is spoken extensively in the U.S. border towns. Because of the relative poverty and lack of amenities in many of the official port of entry towns, one finds that many of the officials in the 40 or more agencies with border roles are local hires. While this provides familiarity with local people and conditions, it can also lead to corruption.

Physical constraints of distance and remoteness alone would make "control" of the southern border difficult even if the political will to secure it existed. In fact, despite the rhetoric, America's politicians do not treat narcotics or illegal immigration as national security threats. Certainly the requisite resources to control the border have not been appropriated. In many communities and statehouses, elected officials and interest groups tacitly or explicitly support the "open border" concept. Even those who advocate secure borders because of the narcotics problem have

not been able to galvanize the U.S. Congress into providing the control agencies with the resources and laws needed to do the job.

Politically, the United States is not willing to pay the price to completely control our border with Mexico and prevent illegal immigration and stop the flow of drugs. A complete inspection of every vehicle as it passed through the port of entry would require a massive increase in manpower, and increase the amount of time required to cross the border to unacceptable levels, both to the U.S. citizens who cross into Mexico, and to the Mexican government, which opposes any increase in the "militarization of the border."

### **Push, Pull Factors**

A flood of illegal aliens crosses the border daily. The vast majority of these migrants are attracted by the higher wages and better working conditions and living standards on the U.S. side. High Mexican birth rates, improving health conditions which lead to greater infant survival, and the inability of the Mexican economy to provide employment for the millions annually coming of working age drive many Mexicans to cross the border in search of employment. U.S. wage differentials are still substantial in spite of the several thousand 'maquila' assembly plants that have sprung up along the Mexican side, and even if the U.S.-Mexican Free Trade Agreement is approved, the income disparities will continue to drive Mexicans to the U.S. for decades to come. Lax enforcement of border sanctions and inadequate INS and Border Patrol manpower will make the risk of apprehension a negligible deterrent factor for most would-be illegal immigrants.

Because of the lack of money to detain those who are caught in the U.S. illegally, there is little to dissuade those who wish to enter. At most, one can expect to be detained for a few hours and then returned to Mexico. Many turn right around and reenter the U.S. almost immediately (the quickest is said to have been recaptured in five minutes). It is obvious the U.S. government is not serious about



percent of the apprehensions. In fact, 90 percent of the illegal alien apprehensions occur over just 200 miles of border, and much of this activity takes place in less than a 15-mile aggregate stretch. In fiscal 1990, INS inspectors and investigators and the Border patrol made over one million illegal alien apprehensions at the border, many of them of repeat offenders. Although down from the high of 1.6 million in 1986, the numbers are moving up again due to the continuing inability of the Mexican economy to provide jobs for its burgeoning population. While 95 percent of the illegals are Mexicans, increasing numbers of third-country nationals are attempting the crossing. Last year, 87 different nationalities were caught at the border, and over the past 20 years, non-Mexican apprehensions have risen fifteen-fold.

### **CASE STUDY: THE TUCSON SECTOR OF ARIZONA**

#### **The Arizona Border Area**

The United States/Mexican border in Arizona is notably unpopulated. In the state of Arizona there are only two border towns of any size, Nogales and Douglas. Neither of these has populations exceeding 20,000. Outside these towns the only inhabitants live on very scattered ranches where it is often possible to travel for several miles without seeing another person.

The terrain in the Tucson sector varies from rolling desert in the area around Douglas to mountainous between Douglas and Nogales and west of Nogales. Even in the rolling desert, there are many arroyos and washes which can conceal men, horses, or vehicles from a casual observer. Vegetation, although sparse, does provide a limited amount of cover, particularly in the canyons and arroyos. The terrain tends to channel anyone traveling north across the border into relatively predictable paths, although the many options available because of the tremendous distances involved along the border make it impossible for the Border Patrol to cover them all continuously.

stopping this type of activity. The Border Patrol, while very serious about its job, has to exercise a lot of judgment as to who will be apprehended and who will be allowed to proceed unchallenged when setting priorities and goals. However, all known offenders are arrested.

### **The Front Lines**

The Border Patrol, founded with 459 agents in 1924 following passage of the first permanent immigration quota law, is the uniformed interdiction arm of the Immigration and Naturalization Service. By law it has the responsibility for enforcing immigration laws between the 28 Ports of Entry (POE). It can arrest illegal aliens anywhere in the United States, and can make searches and seizures on private land within 25 miles of the border, and "board and search" any conveyance within 100 air miles of the Southwest border, setting up roadblocks as necessary. It has also been designated the primary drug interdiction agency between the POEs, at road checkpoints, and in specific corridors by Operation Alliance, the Southwest Border (SWB) counter-narcotics coordinating agency. INS Inspectors and 1500 Customs officials man the POEs, inspecting several hundred million vehicles and tens of millions of persons yearly. Because of the overwhelming volume of this legal traffic, inspectors on average can only spend seven seconds 'inspecting' each vehicle and less on each person in line.

### **The Border Problem Areas**

For enforcement purposes, the Border Patrol has divided the "line" into nine administrative sectors, varying in length from San Diego's 66 miles to Marfa's 365. The service has 3200 patrol agents, but they operate in three 8-hour shifts and many are not available for patrols because of leave, illness and administrative work and court appearances. On the average, only 55 percent of the agents are involved in interdiction work. The Border Patrol agents are assigned principally to high density crossing areas, of which two, El Paso and San Diego, account for the 66

Along many sections of the border there is a network of improved and unimproved roads within a few miles of the border. The roads are generally closer to the border in the towns that straddle the frontier. Once an alien or smuggler reaches one of these roads, his chances of being caught diminish significantly. The traffic on the highways will allow him to blend in and greatly increase the speed at which he can travel inland if met by an accomplice on the U.S. side. There is no natural boundary between the United States and Mexico in Arizona. In rural areas the only boundary is the standard three or four strand barbed wire fence in various stages of repair. Other than marking the border, its purpose is to keep Mexican cattle from intermingling with U.S. cattle. It does not present a very real barrier to human entry.

In the populated area of Nogales the border is marked by a galvanized steel fence that is continuously monitored by television cameras. A television system consisting of ten cameras is scheduled for installation in Douglas in FY 92. There are numerous holes cut in the fence in Nogales through which a man can easily crawl or walk. In 1984 the Department of Agriculture stopped repairing these fences in the border towns. Since then, no agency has been funded to nor accepted responsibility for repairing the fences. The Border Patrol claims that the International Boundary and Water Commission (IBWC) has responsibility for this fence, but in fact the IBWC does not keep it repaired. Border Patrol agents are therefore forced to continuously repair the fence, while aliens and traffickers cut new holes within days. Several of the cuts in the fence are so large that vehicles can easily pass through.

Attempts have been made by the border patrol to erect barriers to prevent vehicles from unimpeded crossings. These barriers include crude ditches cut in 1988 alongside the fence on the U.S. side in Nogales and steel bars placed in drainage culverts that cross the border. These culverts are large enough to drive a

vehicle through and are used by drug smugglers during the dry season (which lasts most of the year). The Mexican government and some U.S. special interest groups like La Raza complained to the State Department and INS about the obstacles. Although still there, the shallow ditches have deteriorated and so have lost their effectiveness. The Border Patrol was forced to remove the bars across the culverts because the bars would trap debris and interfere with the flow of water through the culverts, potentially causing flooding. No other barriers exist to the flow of illegal aliens or drugs across the Arizona border.

### **Illegal Alien and Drug Trafficking on the Arizona Border**

In December of 1990 the Border Patrol made 20 marijuana (3,546 lbs) and two cocaine (421 lbs) seizures outside of the port of entry in the Douglas station alone. Through analysis of tracks, the Border Patrol knows that at least 36 loads got away with an estimated 12,490 lbs of marijuana. They have no reliable estimate of the amount of cocaine or marijuana that went through undetected. There are over 5,000 known illegal border crossings a month in the Tucson sector, a significant portion of those occurring in Douglas. The whole Tucson border patrol sector of ten stations has only 259 law enforcement agents on hand (of 327 authorized). Subtracting personnel on leave, etc., there are few agents per border-mile on duty at any one time. At most, in the Tucson sector's rural areas there are only two agents patrolling at any one time along each 25-mile stretch of border. The Border Patrol in Douglas, with only 55 agents assigned, does not have the manpower to monitor the populated area under its jurisdiction and also patrol the unpopulated areas outside of town. The drug traffic is intermingled with the flow of illegal aliens; however, the large shipments generally occur outside the populated areas of town. During the period of October through December, Border Patrol agents in the Tucson Sector seize an average of three marijuana shipments daily.

Throughout the populated areas of Nogales and Douglas there are safe houses within one hundred feet of the border fence. These houses are owned or rented by drug traffickers or "coyotes" who assist those trying to illegally immigrate. These premises are also used to store and concentrate small drug caches for later shipment inland on faster conveyances. If an illegal alien or smuggler makes it into one of these safe houses it becomes much more difficult for a law enforcement officer to apprehend him. The officer must have probable cause to obtain a warrant to search the premises unless the officer was present and actually saw the illegal enter the premises. This is a rare event since the large numbers of safe areas and the numerous breaches in the border fence make it a matter of luck for an officer to be nearby during an illegal crossing. Most sightings occur with the use of the surveillance cameras located along the fence line. The cameras, in use since 1986, do provide probable cause. Once an agent sights or has reason to believe drugs are in a residence, he obtains a search warrant within two to four hours. Meanwhile, the building is kept under surveillance.

### **THE DRUG WAR: ORGANIZATION AND C3I**

#### **Organizational Problems: Too Many Cooks**

There is no single agency in charge of the drug war, not any strategic intelligence on the drug traffickers. In addition, command and control is deficient, and tactical intelligence is not always shared. Many other organizational problems complicate counternarcotic operations.

Depending on what list you look at, there are 37, 41, or more governmental agencies which are involved in the interdiction of illegal drugs entering the United States. This number does not include the hundreds of local police, county sheriffs, and state law enforcement agencies. The federal organizations range from the obvious ones such as the Drug Enforcement Administration (DEA), the U.S. Border Patrol, and the Federal Bureau of Investigation (FBI). It also includes such diverse

agencies such as the U.S. Park Service and the U.S. Forest Service. The Office of National Drug Control Policy (ONDCP) was conceived to coordinate the efforts of different agencies at the national level. Unfortunately the ONDCP has no direct tasking or line item budget authority over any of the agencies. It can only make recommendations which may or may not be followed.

Operation Alliance was conceived to better coordinate the activities of the agencies involved along the U.S./Mexican border. It, too, has no direct authority over any of the agencies involved, but it is a major conduit of interagency communication at the policy making level. It is under Operation Alliance that major operations are supposed to be coordinated to prevent, for example, the Border Patrol from apprehending a major shipment of cocaine that the DEA has marked and is monitoring. Operation Alliance also works with Joint Task Force-Six (JTF-6), the U.S. military organization that coordinates the Department of Defense (DoD) activities in support of the anti-drug effort along the Southwest border. JTF-6 also does not have any authority to task any DoD agency directly. It can only request forces from the appropriate military headquarters, or the National Guard Bureau. Historically, the military has been cooperative, but other priorities such as Operation Desert Shield/Storm have restricted their full participation on more than one occasion.

The military has other significant restrictions in its role in the "Drug War." The Posse Comitatus Act prohibits Title 10 (Federal) military forces from searching, seizing, arresting, or conducting any related law enforcement activity involving civilians. Title 32 (State National Guard forces) are not subject to the provisions of Posse Comitatus but are generally restricted, as a matter of policy, from direct participation in search, seizure, arrest or related law enforcement activities. National Guard forces are actively involved in cargo inspection operations and are normally accompanied by a law enforcement officer while performing these duties. Both Title

10 and Title 32 forces may conduct detection and monitoring missions in support of drug law enforcement operations. Any suspected drug activity is reported to the appropriate drug law enforcement agency for action.

Moreover, Title 10 forces are not allowed to enter private property without permission of the land owner, unlike Border Patrol agents who may do so in performance of their duties along the border. Although most of the border in Arizona is public land, significant segments are privately owned. Title 32 forces may, if in the company of Border Patrol agents, enter private property in the pursuit of their duties controlling the border.

The use of the National Guard poses some unique coordination problems because both state and federal authorities must be in agreement before the troops can participate. While they are under control of the state, they must continue to comply with the training and readiness standards required by the military in accordance with the Economy Act. The Guard is also subject to recall by the President, as was demonstrated during Desert Storm.

#### **The Narcotics Role of the Border Patrol**

Although its primary focus is on illegal aliens, the Border Patrol makes a majority of the drug seizures along our southern frontier. They are responsible for 60 percent of the land interdiction of drugs overall, and 85 percent in Arizona. During Fiscal Year 1989 the Enforcement Division of INS made 8,756 drug seizure; most occurred along the southwest border and involved aliens transporting cocaine or marijuana. This trend appears to continue--during Fiscal Year 1990 the number of seizures by the two Border Patrol sectors in Arizona alone exceeded 800. As an interdiction, not investigative agency, the Border Patrol turns over drugs and narcotics traffickers to local, state or federal case agents. Border Patrol agents are the only federal presence along much of the line on a constant, routine basis, and are thus the principal drug interdiction agents at the border. That they seize so

much of the drugs located indicates both the extent to which traffickers bypass official POEs, and the porousness of the frontier. It also indicates just how difficult it is to detect drugs at the flooded POEs with antiquated detection methods and inadequate manpower.

### **Intelligence Gaps**

Despite national recognition of drugs as a security threat, and recent attempts to beef up prevention measures, there is little real progress being made in stopping the flow. In fact, there is little strategic information on the 150-200 close-knit Mexican trafficking families that handle most of the drug smuggling, much less on the thousands of free-lancers who do the rest. The U.S. government has made no overall analysis of how the traffickers are organized, what smuggling routes they use, or what methods they are employing. Although efforts are underway to remedy this deficiency, intelligence does not drive most interdiction efforts. At present, the Intelligence there is tends to be tactical, not strategic, and case-related, not predictive. INS and the Border Patrol have not stressed intelligence; they have been swamped trying to hold back the flood of illegal immigrants, and have had neither the time nor seen the utility of analyzing in-depth the trafficking trends, routes and methods. In fact, each of the border patrol sectors has had one or two intelligence officers at most engaged in tactical work, principally to inform later work shifts of recent crossings that should be followed up. They are just getting personal computers in Tucson, and have none in Nogales, where manual typewriters, old vehicles and carbon-forms documents indicate the lack of any newer technology on the front lines.

### **The Role of EPIC**

The El Paso Intelligence Center (EPIC) was created in 1973 with 18 people. The Office of Management and Budget (OMB) requested it be established to monitor the flow of Mexican brown heroin then flooding the country. But EPIC does



not fill the strategic intelligence gap. Its focus is on tactical intelligence. Its 12 sections and 300 employees are basically conveyance oriented, i.e., focused on methods of drug transport. EPIC does no significant tactical analysis, production, or historical work. Its primary value is as a database on individuals and vehicles previously involved in drug, arms and illegal alien smuggling. It serves as a clearinghouse for case-related intelligence, and a focal point for gaining access to separate agency data bases. To date, EPIC devotes 85 percent of its resources and 10 of its 12 sections to drug smuggling, but only 10-12 people to illegal aliens. It does not process the one million deportable alien forms I-213 prepared by the INS and Border Patrol for strategic information on entry patterns. In fact, these forms do not contain that information in an easily retrievable manner because there is no standard format for reporting intelligence information. Foreign intelligence is not delivered in a timely fashion to the border interdiction level, and many border agents are unaware of what EPIC can do for them. In the Tucson Sector, agents only use EPIC to check on false claims to U.S. citizenship made by possible illegal aliens.

EPIC was designed to be the single source of tactical intelligence information for counternarcotic operations. It receives intelligence information from all agencies involved in anti-drug operations and compiles a database. This information is available to law enforcement agencies on a 24-hour-a-day basis. Information is stored in several computers, many which are unable to communicate with the others. Information on critical items such as how drugs are being transported across the border and what paths the drugs take is not available at EPIC. No studies are done to determine if a correlation can be made between suspect aircraft landing near the border on the Mexican side and an increase in drug traffic crossing the border shortly afterwards. Information and studies like these are being done at the local level on an ad hoc basis by dedicated agents with no formal training in

intelligence analysis, but there is no formal strategic program nor personnel dedicated to these tasks.

Intelligence capabilities at EPIC may improve soon with the installation of a new computer system that will enable the storing and processing of information much more effectively. Major limitations will still exist at the local level because computers are non-existent at Border Patrol stations, where agents are lucky if the electric typewriter works.

### **A Good Intelligence Start in Tucson**

Today, most drug traffickers make it across the border. Some are detected, but most are not stopped. As the result of a unique, new (4 months old) intelligence program along the 281-mile Tucson border sector, the sole Border Patrol intelligence agent and a Defense Department officer have begun tracking systematically all known border crossings. This is a new concept for a sector organization. Previously, sectors did not include an intelligence cell. After each shift, Border Patrol agents submit reports on apprehensions, type and amount of drugs seized or detected and the method of transportation. Compiling data that heretofore had only been used by the next shift for arrest purposes, the Tucson team has, for the first time, been able to determine, compile, and report crossing patterns, loads of drugs seized and "got aways", and trends. Last October, for example, they found that while 22 marijuana and cocaine seizures were made by their station, totalling 4000 pounds, about 12,500 pounds of drugs in 36 separate loads made it safely into the US. In November, they tallied 45 "get aways" totalling 10,600 pounds versus 36 seizures of 5600 pounds. This new tactical intelligence effort has yielded first-ever maps and times of crossings, and has better enabled management to respond with sensors and manpower along new ingress paths. However, this information, which is on 3x5 cards in a shoe box, is not forwarded to EPIC because of a lack of administrative help and a feeling that EPIC would do

nothing with it even if it had a system to analyze the data. The Border Patrol is beginning to put tactical intelligence data into computers that are just arriving at field offices, and hopes to have sector intelligence data bases on line by June 1991, using the help of Defense Department intelligence specialists now working with the Border Patrol in several sectors. The Border Patrol will look to Operation Alliance, not EPIC, to maintain its tactical intelligence system.

### **Lack of a Strategic Focus**

The President's National Drug Strategy calls for the creation of a National Strategic Intelligence Center to fill the huge intelligence gap that exists. So far this organization remains a "proposal;" strategic intelligence support for the interdiction effort thus remains largely non-existent. Most intelligence is collected and remains at the local, tactical level where it is filed, but not processed or shared vertically or laterally with other agencies (this is less a problem where task forces exist). The nine western Border Patrol sectors are currently developing an intelligence network among themselves, but it is not yet operative. Meanwhile, overworked interdiction agents and tactical intelligence analysts are reluctant to produce intelligence reports for other organizations that will not be used or appreciated. They doubt such reports will be blended into an overall picture of the border, or bring them needed resources to counter the threat they accurately portray. Noticing that EPIC is not sending back any analyzed reports based on their submissions, they doubt the usefulness of the whole exercise. At any rate, it is their own agencies which must respond with the resources to counter their particular view of the threat, not Operation Alliance. Intelligence reports get little credit, while arrests do. Worse, Operation Alliance might take Border Patrol reports and send them a task force or study group that will divert the Patrol's time and efforts. Operation Alliance-sponsored special operations will probably not bring the Border Patrol the resources to make a permanent dent in the illegal traffic.

### **Insufficient Coordination, Command and Control**

Not only is there no single agency looking at the border as a whole, but there is no central command and control of enforcement resources along the Southwest Border. On behalf of the Treasury Department, Operation Alliance is supposed to perform these tasks, but it cannot order, only cajole and suggest. This herculean task is nearly impossible because there are 700-1000 different sheriffs offices and other law enforcement groups with overlapping border jurisdiction. Operation Alliance cannot fund major budget deficiencies at the agency level. So there is no systematic collection of information on the "enemy" organizations, and no centrally controlled way to send response teams or to rationally allocate resources to meet changing threats. This effort is left to the individual agencies and their own resources.

Moreover, because of competition to be in on drug seizures and due to the focus on "body counts," there is little coordination in the field on major drug cases. Institutional jealousies hinder that cooperation. When major seizures take place, every agency with the slightest contribution takes at least partial credit. The separate seizure reports go to Washington, where they are separately reported, leading to exaggerated inflation of seizure totals.

While there is a well articulated National Drug Strategy, the strategic intelligence, coordination and cooperation to make it work are lacking. In 1991, nine measurable goals were established in the third generation of this strategy. But lacking a realistic baseline of what is coming across the border, quantifying success with seizure figures may be very unrealistic. An overall picture of where, when and how the enemy is crossing our borders is unavailable. No one has been given the overall job of tasking, and no one has taken on the job of coordinating resources to stem the flows.

### Wrong Focus on Special Operations

Providing the INS, Border Patrol and other law enforcement agencies with more manpower would be the best way to increase drug seizures. However, there is a tendency to spend resources on short-lived special operations. While these operations may result in some drug seizures, they also distract the front line agents from their more important daily tasks. When the operations become successful, the traffickers stop their flows and wait for the operation to end, or send their drugs to less protected crossing points. The agents in the field understand the political reasons for high visibility special operations, but recognize that they are in a protracted war with a dug-in enemy, and should not be fighting a series of short battles. The enemy is well-organized, has high technology detection and counter-intelligence equipment, secure communications, night vision goggles, sophisticated arms, and a network of scouts and agents. Constantly probing for weak links in our defenses, the smugglers of people and drugs have the time and incentive to wait out the special operations, circumvent U.S. static defenses, and capitalize on our vulnerabilities and standard operating procedures. They also have the tremendous financial resources that enable them to develop a vast network of information, intelligence and protection. Capitalizing on shift changes, dispersion of U.S. retaliatory forces, and lack of multi-agency, tactical integrated response teams, they know they can win with patience.

A major problem with using the military in counternarcotics operations is that its presence is only temporary and at the discretion of the military commanders (or the state, in the case of the National Guard). Military operations along the border are effective in stopping drug traffic only as long as the operations last; but once terminated, the drug traffic resumes at the same or higher levels along previously

utilized routes. The traffickers often just stockpile their drugs at the first sign of a military operation, knowing they can outlast their opponents.

Operational control of military forces is also a major concern at the local level. Military operations are planned and scheduled to coincide with the normal training schedules of the units involved. The long lead times required make the operations very predictable and relatively inflexible. In many cases the implementation has been awkward.

A problem voiced by several officials working with Guard or active duty forces is the tendency for the military to reassign units without coordinating with the Border Patrol. During one visit we observed the National Guard reassign a sergeant performing duty as a sensor monitor in the Nogales station to inspecting vehicles for customs. The Border Patrol found out about it the night prior to the reassignment. This resulted in a last minute shift of duties, and the pulling of an agent out of the field to monitor the sensors. (It should be noted that these duties require intensive training--identifying landmarks and streets from black and white low light television cameras at night is a task which requires hours of practice and extensive knowledge of the local area).

#### **Other Deficiencies Exist**

In addition to more agents and money for agent overtime, the Arizona Border Patrol needs more roads built parallel to the border so that patrol agents can detect illegal entrants and arrest them more quickly. At present, the sector can field only an average of two on-duty men per 25-mile rural sector. Anything that can help them detect and respond to rural incursions faster and with fewer false signals ("hits") will lead to more drug seizures. Better, more mobile sensors, ground radars (none exist), satellite and signals intelligence information, observation posts, fences and ditches can all help stem the flow of drugs and people across the border.

The lack of secure communications is particularly damaging to effective interdiction efforts by the Border Patrol. The Tucson Sector does have a secure facsimile machine, but while secure telephones are supposed to be available for all offices, today not all offices have them. Where they exist, they are often inoperable for various reasons. It is not beyond the capability of drug rings to monitor the open-line telephone calls of the Border Patrol, especially those of senior officials who must be notified of all important operations. Currently there is no way for the Border Patrol to know if their telephone communications are in fact being intercepted.

Communications between Border Patrol stations and the agents in the field are carried out on open FM radio nets. Anyone interested in monitoring these communications could buy a scanner easily and legally on the open market. Radio direction finders are also available to determine the position of the transmitters and intercept the communications. Tucson Border Patrol agents have seized scanners from drug traffickers in the past. The Tucson Sector has recently acquired several hundred secure, hand-held radios. These can be used only for line-of-sight communications between agents until a repeater system is funded and installed. A base station and vehicular radios are on order.

Computer terminals to query the identification of suspects or vehicles are not available to the Border Patrol in Arizona. These devices are installed in the patrol cars of most major city police forces and provide almost instantaneous feedback on requests for information about the history of suspects. The Border Patrol agents must now make their requests verbally over an unsecure radio to an agent at the station who must then telephone EPIC to make the inquiry. The agent at the station then relays the information back to the agent in the field. This is an extremely inefficient method, not only time consuming, but also prone to errors because of

mispronunciation and other causes. EPIC is also unable to handle large volumes of requests, thus making routine checks the exception rather than the rule.

## **TECHNOLOGY AND THE DRUG WAR: CURRENT SITUATION**

### **The Current Use of Television Technology**

Currently, an illegal alien or vehicle in one of the border towns can reach the safety of a house, garage or main egress road in from 15-45 seconds after penetrating. In Nogales, for example, the holes in the fence in the half-mile center section of town are so numerous and large that an illegal entrant--unless stopped immediately--has great probability of escaping in seconds. Since 1986, the Border Patrol has had a series of remote controlled television cameras mounted high on towers overlooking the downtown Nogales border. It uses these on a round-the-clock basis to detect illegal crossers and direct waiting response teams for the arrest. However, when the bulk of the flows occurs from 6:00 p.m. to midnight, and on weekend shopping days, the flood of entrants overwhelms their efforts.

Television cameras do not scan beyond the urban core areas, where they are primarily focused on the fence line. While the cameras are in fixed positions, they can swivel 360 degrees. Unfortunately, the cameras are black and white and have limited night capability. An agent monitors all of the cameras simultaneously on five television sets at the Nogales station and directs mobile units to intercept those crossing the border illegally. The lack of color and poor contrast in low light conditions make the task of providing a sufficient description of the suspect person or vehicle very difficult. Some of the television screens need new picture tubes.

The task of monitoring several cameras at once is complicated by several factors. In order to watch large sections of the border, a wide field of view must be selected on the camera. This makes detecting movement very difficult. The inability of an agent to maintain his concentration during periods of inactivity further hampers his ability to detect motion on one of the several screens. The Border



Patrol has enhanced the system's capability by placing seismic sensors in high traffic areas to provide cuing for the agent, alerting him to search a particular area more closely.

### **Characteristics of Current Ground Sensors**

For about twenty five years the Border Patrol has employed sensors to detect aliens and drug traffickers outside the border towns. Most of the approximately 3000 sensors in use today along the Southwest border incorporate Vietnam-era technology. These sensors are of three types: magnetic, seismic, and infrared. Except for a few infrared sensors used to detect aircraft landing on seldom used airfields close inside the U.S. border, most of the sensors are magnetic or seismic. The bulk of the 220 devices in use along the Arizona border are Teledyne manufactured seismic sensors. These rather bulky objects consist of a sealed battery and a cylindrical metal detector and transmitter. Like the magnetic devices, these sensors are dug into the ground or hidden (all or in part) in above-ground structures. The magnetic sensors are directional, i.e., they are aimed at a path or valley to pick up vehicles or metal on horses or aliens passing within range. However, there are many mineral deposits in Arizona, and sometimes these deposits trigger the magnetic sensors. The range of the magnetic sensors is limited to several meters, while the infrared sensors can detect motion within 75 meters, and the seismic within 100 meters if the target is within line of sight. In the Tucson Border Patrol sector, generally only 75 percent of the sensors available are in use at any one time. The rest are held in reserve or are undergoing repair. Border Patrol officials consider the old Teledyne sensors to be generally reliable. The main problem with them is their limited power supply, their bulk and their inability to "discriminate." The agent monitoring the sensors and television screens at station headquarters cannot tell what he has detected-- in other words, whether what

passed by was a rabbit, cow, person, vehicle or animal packtrain. The sensor only registers a "hit," i.e., that something passed nearby.

The first sensors were tied to their base stations by buried land lines, which meant that they were difficult to use and relatively immobile. These sensors have all been replaced by less constrained devices, mostly made by Teledyne Corporation. Today, after registering a "hit," the Teledyne sensors notify the base station via telemetry, in most cases in 250 millisecond transmission bursts on two frequencies. Nine repeaters, located on mountain tops, relay the signals to the monitor station in Nogales as well as to a sector communications center in Tucson. (An additional 14 repeaters are soon to be installed in the Tucson sector, thus allowing for employment of sensors farther out than now possible.) While better than their ancestors, the current sensors often are incapacitated during July and August when lightening strikes temporarily knock out up to half of the repeaters.

Because the Teledyne Sensors use old technology, it is often hard to obtain spare parts. Parts are not commercially available for the early 1970s models, and Border Patrol technicians must thus cannibalize to keep them operating. Parts are available for newer models, but sometimes they take two months to arrive. There are no contractor-furnished testing devices to isolate faults, and Border Patrol technicians do not have basic electronic shop equipment. The result is that technicians are constantly battling to keep their aging sensor inventory working.

Another problem with sensors in general is that they can be located by energetic alien and drug traffickers using metal detectors or commercial frequency scanners. Unless the sensors are moved at night and infrequently, trafficker scouts can see Border Patrol agents burying the sensors or can look for signs of displaced earth where they have been hidden. Although usually well covered, the sensors and their protruding if small antennae have been vandalized or stolen in the past.

Nine years ago the Immigration and Naturalization Service in Washington ordered a new generation of sensors to replace the aging Teledyne devices. Unfortunately, this equipment has not worked in the field. Almost all the devices delivered to the Tucson sector have been defective; according to the agent in charge of the program in Tucson, the components are of poor quality, the cases leak, and the sensors fail to work. The equipment failure rate is "terrible," and in most cases the company has been unable to make them work before the warranty ran out. The result is that the Border Patrol still relies on Vietnam-era technology even though smaller, more versatile and better discriminating sensors are available in the market.

#### **Employment of Ground Sensors**

There is no central management of sensors along the Southwest border, just as there is no overall coordination of intelligence gathering, command and control and enforcement resources in the Southwest border counternarcotics effort. Each agency runs its own sensor program, using the equipment it chooses to buy in the manner it sees fit. Most of the 3000 sensors employed along the Southwest border appear to be managed by the Border Patrol. In Arizona, the Customs Service gave its sensors to the Border Patrol about five years ago. Customs has begun procuring some sensors again for its own case work, using them between the ports of entry when it has indications of an impending drug shipment from informants. Local law enforcement agencies generally do not use sensors, at least in the Tucson area.

The Border Patrol allows each of its nine Southwest border sectors to manage its own sensor program. Because of the dearth of repeaters, only about 30 percent of the Southwest border is covered by sensors; the rest is too remote to cover or too inaccessible or rugged to warrant sensor emplacement. Within each Border Patrol sector, the subordinate border stations decide where and when to place their sensors. For example, each of the ten Tucson sector stations has an agent who

serves concurrently as intelligence agent and sensor manager, usually for a period of six months before another agent takes his or her place. The agent moves the sensors about in response to information about new ingress routes being used by drug or alien traffickers. Unfortunately, Border Patrol agents do not have current detailed maps of the border area to help them decide where to place their sensors. They would like to have satellite photographs but so far have been unable to obtain them. They must therefore rely on knowledge of the terrain gained from years of daily patrolling and their skills at tracking (referred to by them as "sign cutting") to decide where best to place their ground sensors.

The sensor/intelligence agent decides to use a ground sensor after consulting with the agents who patrol the rural border areas by plane, horse or vehicle. Using methods not unlike those used by Indian scouts during frontier days, these agents rely on their experienced-honed tracking skills to detect tire, foot or hoof prints along the border. When they find fresh tracks leading inland across the border, they either follow the tracks in hopes of making an apprehension, or note the location for later shifts to follow up.

Generally the agent is able to determine what made the tracks, when they were made, and how many animals, people and vehicles were involved. If the tracks were made by a human, the experienced agent can determine by the characteristics of the signs if the person was carrying a pack. Often backpackers are drug smugglers, and the agent knows whether legitimate campers/hikers use the area. A good agent can tell how much weight the animal, vehicle or person was carrying from the depth of the tracks and other characteristics. Experience has shown that human drug smugglers carry up to 40 pounds of drugs and animals twice that. Cars and trucks involved in narcotics smuggling usually carry up to a thousand pound of marijuana or (less often) cocaine.

When agents have reason to believe that a trail is being used for illegal crossings on a regular basis, they request that the sensor agent allow them to hide seismic or magnetic sensors along the trail, or where they think the trespassers intend to go once inland. The sensors are arrayed in the best way to detect later use of the trail by the intruders, and, in the case of drug smugglers, determine their "load out" spot. In addition to being employed in response to new tactical intelligence ("hot spots"), the Border Patrol also places some sensors in spots where traffickers and illegal aliens regularly cross. These spots tend to be close to border towns like Nogales, Yuma and Douglas, often just feet from the POEs. Dozens of "hits" are registered on these sensors daily and the sensor agent radios patrol agents to respond. Unfortunately, these often turn out to be false alarms. Wandering cows, dogs, ranchers checking their fences, and even heavy rain can trigger the sensors. Scarce manpower must be diverted from the downtown "main effort" to respond to outlying sensor hits. While a good, alert sensor agent can often tell by the pattern of sensor hits if an animal has triggered the sensor, too often a pair of agents is forced to waste time investigating. As a result, especially during busy periods at night, some agents tend not to respond to sensor hits not otherwise corroborated.

Another major problem is that the stations have too few sensors to adequately cover the potential crossing points in rural areas. With only 220 sensors for the Tucson sector's 281-mile border, the agents at best can only put a few sensors along the line within the area covered by the repeaters. Even if detected by a front line sensor at the entrance to a path, the monitoring agent is likely to lose the intruders as they move inland unless the terrain is such that only one or two secondary trails can be taken. In that case, if the devices are placed at the branches of trails leading up valleys, canyons or into the desert, the sensors will help monitoring agents determine who and what may be moving inland. But if there

are multiple ingress paths or branches off the main entry route, there are not enough sensors and time to hide them. The intruders are usually lost as they take unforeseen routes after their initial detection. Even if the sensors are placed strategically, they can be circumvented by luck or the countermeasures mentioned earlier. The traffickers on mules or in four-wheel drive vehicles may detect the sensor transmissions by their portable scanners or metal detectors, or simply walk past the sensors out of range if the trails are wide.

Although there are problems with the current technology, and the Border Patrol has too few fixed sensors, most agents say that, if forced to make a choice, they would rather have more and better sensors than more agents. They consider sensors (and their television cameras) as invaluable tools of their trade, allowing them to focus very scarce and overworked enforcement resources on "high quality" targets. They believe that the "run of the mill" illegal alien tends to cross over and through the downtown fences, while the drug traffickers carrying large loads and the aliens who cannot afford to be arrested because of prior criminal records or other reasons will cross outside of town in areas potentially monitored by sensors. The Tucson sector would like to have 1000 fixed sensors to better "flood" potential crossing sites along the rural border they monitor.

While the sensors are employed primarily to detect and apprehend narcotics traffickers, they are useful against the secondary illegal alien targets as well. The traffickers tend to keep their operations separate from the "coyote"-led illegal alien groups for security reasons. But on occasion drug traffickers will use mass charges of illegal aliens to distract the border patrol while they run their drugs across the border elsewhere, or as probes to see how well the Border Patrol is watching certain sectors. If the aliens are getting through, the drugs are often sent later. And some of the 89,448 illegal aliens apprehended in the Yuma and Tucson border sectors were carrying drugs for their own account or at the behest of organizations.

In FY 90 the Border Patrol arrested 581 persons with drugs along the Arizona border: 209 U.S. citizens, 157 legally admitted aliens, and 215 other aliens.

### **TECHNOLOGY ENHANCEMENTS**

#### **Needed--A New Type of Sensor**

Much of the technology used on the Southwest border is obsolete. A new generation of sensors exists that can enhance law enforcement efforts on the border. If a combination of discriminating stationary and movable sensors could be developed and placed at promising spots, more border patrol resources could be employed in "flood control" at the urban front, thus forcing the traffickers and illegals into the open flank areas. The Tucson sector needs a total of 1000-1200 sensors to cover their assigned area. New acoustical sensors, small enough to hide in trees or shrubs, already exist. These sensors, along with solid state seismic sensors, could be employed to form an in-depth stationary sensor field.

In addition to better depth, a sensor field would help the sensor manager understand what is crossing the field. By and large, if this occurs, the agents--at least in the Tucson area--will have several hours at a minimum to respond to the sensor "hits." But more of the present generation of sensors could paradoxically overload the shrinking number of agents and decrease their efficiency given the sensors' defects and indiscriminate detection characteristics. New sensors can be made to discriminate among humans, animals and vehicles, so that enforcement managers can decide how to prioritize their response efforts. As illegally crossing vehicles, mules and backpackers generally carry drugs in remote areas, their accurate detection can lead to much greater seizures than at present. While the Operation Alliance Southwest Border Strategy document calls for a centralized sensor plan as part of an overall beefed up tactical intelligence picture of the border, there is no sign any equipment is being purchased or any plan implemented. The Mexicans operate no sensors on their side of the border, and tactical-level

international border cooperation is rudimentary in most areas anyway. For ~~the~~ time being, the Border Patrol will have to upgrade and operate its own sensors, ~~probably~~ with DoD assistance, while feeding its collated information to EPIC, Operation Alliance or some new agency for tactical processing.

### **Where There's a Will, There's a Way...**

As the foregoing review of problems reveals, as a nation we have not given our forces the political support, funding or high technology equipment to compensate for the opponent's strengths in technology, manpower, resolve and time. If we had the will, we could place 40,000 National Guard observers at 300-foot intervals in remote areas to detect and thus hinder drug smugglers and illegal alien crossings. We could build secure fences in high traffic areas, and vehicle impediments as necessary outside POEs. However, short of these steps, there is much that current, low cost technology can do to reduce drug smuggling and alien flows. Already, aerostat balloons and other aerial surveillance are driving major foreign smugglers from the air to the ground short of the border.

### **New Sensor Platforms and Systems**

We have evaluated three types of new sensors for their effectiveness in detecting the illegal entrance of aliens or drugs in the unpopulated areas between the Ports of Entry: an Israeli passive sensor system (Coastguardian), remotely piloted air vehicles (RPV), and unmanned ground vehicles (UGV). All three types of systems were evaluated for their utility in expanding sensor coverage along the border and providing enough response time to the Border Patrol to apprehend illegal entrants prior to their escape onto the road network. The sensors must be sensitive enough to detect humans, pack animals, and vehicles, but not be subject to false alarms. The systems should be able to discriminate among humans, pack animals, and wildlife and be able to determine their location accurately enough to allow the responding agents a reasonable chance of finding them. The systems should also



be stealthy or inconspicuous in nature because if detected they could easily be avoided or destroyed. The cost of the system must be low enough so that each sector along the border could have four or more of them, enough to provide approximately 10 miles of coverage simultaneously.

### **The Israeli System**

The Israeli Coastguardian system is a unique radar system which uses a central transmitter and a series of passive receivers to detect moving targets within approximately 40 kilometers. Information from the receiver sites is fed to a processing center which converts the raw radar data into digital signals and sends it to a control center for display and evaluation. The system is capable of detecting, processing, and tracking 100 targets simultaneously. By maintaining a track history and overlaying it onto a map, the system has some capability to predict the path of illegals crossing the border. Although the system has no direct capability to discriminate between humans, pack animals, and vehicles, it can detect all three and by evaluating speed, and other characteristics, determine with a high degree of accuracy what it has detected.

The Coastguardian system has several favorable attributes which make it a viable option for the southwest border. The system has excellent range and azimuth coverage, 40 kilometers and 180 degrees respectively. The receiver towers, while large and impossible to hide, could easily be disguised as electrical power transmission towers. The primary detection equipment, the receiver towers, are totally passive and are invulnerable to smugglers or aliens carrying electronic scanners to detect signals emitted from detection devices. The transmitter site is located several miles from the receivers and is an omnidirectional system, thereby not providing information to specific targets. The radar used by the Coastguardian system is not significantly affected by rain and is effective in all environmental conditions.

Although the Coastguardian system has many attributes, it also has several disadvantages which must be considered if it is to be used on the southwest border:

1) It is a fixed, immovable system consisting of permanent towers and buildings. Although it can be disguised as a power line tower, there is a high degree of certainty that the purpose of the system would soon be discovered. Drug dealers have a very effective intelligence network which could easily uncover a fixed system. Traffickers would have an incentive to knock down the transmission towers to incapacitate the sensor network.

2) The system is expensive. Specific costs are not available, but estimates run into the millions of dollars for the Tucson Sector.

3) The radar is limited to line-of-sight restrictions. Even if the towers were mounted on the tops of hills and mountains, astute smugglers could, once the tower locations were known, easily avoid detection by utilizing terrain masking (staying in valleys and arroyos to hide from the radar beams).

4) Environmental impact statements addressing several topics would have to be filed prior to erecting permanent structures. Environmentalists are very likely to protest the employment of this system in national parks and forests. The long term effects of electromagnetic radiation on wildlife and vegetation is unknown and considered suspect by many groups. The effects of exposure to electromagnetic radiation on humans are also under investigation and could be a factor in employing this system.

5) The Coastguardian system, having the ability to "see" 40 kilometers could also be considered intrusive to the Mexican government. Mexican authorities are not likely to condone the use of a system by the United States which could track the movements of Mexican citizens inside Mexican sovereign territory.

Although not a disadvantage directly attributable to the Coastguardian system itself, the Mexican government could oppose the implementation of the system for

various reasons. The Mexicans have been very vociferous against the militarization of the border and a radar system could appear like a military system. It would be easy for them to sight the same environmental factors mentioned above to protest the use of the system, reasoning that such a system would be acceptable for military applications, but not for use along a peaceful border.

### **Remotely Piloted Vehicles**

Several RPVs were examined at the Redstone Arsenal in Huntsville, Alabama. The Joint Program Office provided the specifications on the Pointer, Pioneer, and Aquila vehicles developed under their auspices and discussed a system under study by the Drug Enforcement Administration. Each system has its own capabilities and limitations.

The Pointer is a small system, transported in two 40-pound backpacks. It is thrown by a single person as if it were a spear. The aircraft is powered by a very quiet battery-operated motor and has a range of two to three miles and an endurance of up to one hour. The Pointer is remotely piloted by the person launching it or an assistant operating the battery powered radio controls. Because the system does not have an internal navigation system or automatic pilot, it must maintain line-of-sight with a control station. This means the system cannot fly over hills or into valleys or canyons, a significant limitation in many areas along the border.

The Pointer carries a fixed, day-only television camera which has the capability to detect humans if the vehicle is flown no higher than 500 feet above the ground. Because of the low altitude required, the field of view is relatively small thus limiting the area covered during the flight. Aircraft vibration and instability in gusty winds also limit the system's capability to distinguish images it displays. The Pointer has no night capability because it must be flown visually by the operator. The system does not have any method of determining the location of targets on the ground

other than by the operator judging the location visually relative to the position of the aircraft. Other than the camera, the Pointer has no other sensors on board.

The Pioneer is the RPV used by U.S. Navy battleships to provide target spotting and battle damage assessment. The system is considerably larger than the Pointer, transported using two 5-ton and two high mobility multipurpose wheeled vehicles with trailers. It is launched with either pneumatic or rocket assisted launchers and is capable of operating for up to five hours. The vehicle is propelled by a pusher propeller engine which runs on aviation gasoline. The Pioneer carries a payload of either day television or night forward looking infrared sensors, and when flying at an altitude of 1,000-13,000 feet above the ground can provide reasonable differentiation of humans or vehicles. The Pioneer requires a crew of 20 for flight operations.

The Aquila is an older system and several are now in storage and therefore free and readily available. Originally developed as an RPV for location and laser detection of targets, it is now used in tests by the Joint Technology Center (JTC) to evolve technology for ground stations, mission payloads and data links. The original Aquila program was terminated for reasons of affordability and the contract has been closed out. The JTC could make available an Aquila system for testing the viability of different sensors on an aerial platform, but production is no longer feasible.

The Drug Enforcement Administration is currently running an evaluation on the use of RPVs for their role in counternarcotics. The platform they are using is a Rutan EZ Long, which is currently sold as a private passenger aircraft. Specific information on the aircraft was not available; however it was speculated that it would have a greater range and payload than the Pioneer. Launch and recovery would most probably have to be from hard surfaced runways because of the tricycle landing gear and the size of the aircraft.

RPVs offer one significant advantage over manned aircraft in certain military applications--if they are shot down by enemy fire no life is lost. This makes RPVs especially advantageous for missions such as target spotting/designating or battle damage assessment which require a relatively slow moving platform to loiter for long periods. In a non-hostile environment the RPVs have no advantages but rather several major disadvantages:

- 1) RPVs are very expensive systems to purchase and operate. The Pioneer system costs well over \$1,000,000 because of the expensive avionics required to fly it. The Rutan EZ Long will cost over \$1,500,000 without the sensor package on board, well over twice the normal cost of the aircraft, because of the electronics and avionics required to fly it remotely. Although the Pointer costs only \$10,000, it has a very limited capability.

- 2) Some RPVs are manpower intensive. A crew of twenty is required to fly the Pioneer. The Border Patrol does not have the bodies to spare or expertise to fly these vehicles.

- 3) RPVs need a benign ground environment for launch and recovery. The launch site for a Pioneer must be accessible by wheeled vehicles and the EZ Long requires a runway. These could be very significant limitations along the Arizona border.

- 4) There are significant legal questions regarding the operation of unmanned aircraft in U.S. airspace. None of these aircraft has any means of clearing its own flight path and would be completely dependent on FAA radar to remain clear of other aircraft. Since the aircraft are designed to be stealthy, they are not easily seen by pilots of other aircraft. The FAA would require a radar transponder on board an RPV and also require it to operate in restricted or NOTAMed airspace (a Notice to Airman NOTAM is a warning published to all flight service stations warning of hazards to aviation). This would prevent any surprise or

secrecy in RPV operations except in the limited U.S. Air Force restricted airspace currently available along the border.

#### Unmanned Ground Vehicles (UGVs)

The Joint Program Office provided information of several UGVs with which the DoD is currently involved. The systems ranged from a \$1,500,000 High Mobile Multi-Purpose Wheeled Vehicles (HMMWV) modified with day/night cameras, remotely aimed and fired 50 caliber machine guns, and a fiber optics cable for communication and control, to a \$40,000 small Honda four wheel drive all terrain vehicle with TV and acoustic sensors. Several of the systems are available commercially, and other than the acoustical sensors, are "low tech" and easily maintained. All of the systems evaluated have the detection and discrimination capability required for anti-smuggling operations. The higher cost systems have self protection systems (such as machine guns) or enhanced ability to navigate over open terrain.

Legal and moral constraints along a peaceful border prohibit the use of lethal self defense systems such as machine guns on a Border Patrol UGV. Active non-lethal systems such as sirens would be inexpensive and provide adequate deterrence. Passive systems such as camouflage and light armor in vulnerable areas would be the most cost effective method of self protection.

Although none of the UGVs presently available would fulfill the requirements along the southwest border, the Joint Program Office said such a system could be developed at relatively low cost. The basis of the system would be a small, off-the-shelf ATV such as a Honda. Commercially available, these systems have proven reliable and are easily maintained. Parts are readily available, and maintenance could be performed by local dealers, thus minimizing the manpower required to operate and maintain the system.

Electronic equipment proposed for the system consists of:

- 1) Day television camera
- 2) Night television camera
- 3) Acoustical sensor and processor
- 4) Satellite navigation system (GPS)
- 5) Transmitter/receiver
- 6) Remote steering system

The day and night (either low light or infrared) television cameras are readily available through commercial or military supply channels. A zoom lens for the system must be capable of determining from a distance of two miles if a person is carrying a rifle or other similar size weapon. Mounting the cameras on a telescoping mast would allow the cameras to operate as the driving cameras and as the surveillance cameras. A mast would allow the UGV to be positioned behind rocks or bushes to conceal it but still allow the camera to be raised to observe as required.

The acoustical sensor proposed for the vehicle has not been tested in the role proposed. Sensors are available which have an impressive capability to detect both ground and airborne vehicles. These systems have the capability to determine the type of vehicle and, when used in groups of two or more, the location of the vehicles and their direction of travel. Officials at the Joint Program Office believe the sensors have similar capabilities against people and pack animals, albeit at a reduced range. The acoustical sensors are not restricted to line-of-sight limitations, but their performance and locating capability are degraded by physical obstructions. Attaching the sensor to the telescoping mast may alleviate some of this problem.

The acoustical sensors perform a two-fold mission. First, they provide a relatively long-range detection capability, particularly for vehicles. This would provide cuing for the operator to activate the TV camera and simultaneously provide some discrimination as to what type of object has been detected. The operator

could then use the TV system to visually identify the object and determine if interception was required and if so, what type of arms were being carried by the smugglers/aliens. If the object is not within line-of-sight of the system, the operator could remotely drive the system to a position from which the TV camera could view the suspect.

A method for accurately determining the location of the system is required so the operator will be able to correlate a detected object's position with a map location. A GPS system will provide the necessary accuracy at low cost and weight. By correlating the object's range and bearing to the known location of the UGV, the on-board computer can precisely determine the location of the detected object. The operator can then dispatch a team to intercept the smugglers/aliens.

A transmitter/receiver to data link the sensor information to a control van or headquarters is readily available through normal procurement channels. A steerable antenna is desired to minimize the capability of smugglers/aliens to intercept the signal. Fiber optic lines are available to eliminate this problem but they are expensive and hinder the range and maneuverability of the UGV. Most radios are limited to line-of-sight, but depending on conditions this may not be a factor. Relay stations and telephone links would allow the sensor information to be sent to multiple stations, including the sector headquarters. A control van, capable of monitoring and controlling several UGVs simultaneously, would allow the greatest flexibility in employing the system by not depending on fixed relay sites. Several remote steering systems for the vehicle exist that would be adequate for the Border Patrol mission. Reliability and cost should determine which should be selected. The system would be powered by batteries which would be recharged by the vehicle engine. It would remain virtually noiseless except periodically when the engine was started to recharge the batteries. Initial estimates give the system a one



week cycle between refuelings. Solar battery chargers could extend this time, but would add to the expense and complexity of the system.

Informal discussions with the Joint Program officers revealed that they would be interested in building two prototype UGVs for evaluation. Construction would take two to three months, primarily dependent on availability of the acoustical sensors. Full scale production would be done by a civilian contractor at an estimated cost of approximately \$40,000-\$60,000 per vehicle. Integration of the sensors is not foreseen to be a problem, but this presumption has not been tested.

Formal tactics on employing the system described cannot be developed until the system capabilities have been tested and determined. Preliminary discussions of tactics center around a system consisting of four UGVs which could cover an area of approximately 10-12 miles along the border. The units would be transported to an area near their positions by truck, where they would be unloaded and driven remotely to their final location. The location of each UGV is to be determined by several factors:

- 1) Line-of-sight restrictions between the units and the control van.
- 2) Type of threat anticipated (vehicular or personnel)
- 3) Concealment

A team of Border Patrol (or other drug law enforcement) agents should be available to respond rapidly to detected threats. The team would be notified by secure radio of threats and be directed to a precise location to intercept the smugglers/aliens. The system operator could also provide the agents with vital information on the number of illegals involved and what type arms they are carrying--information which is now unavailable to them.

The system must be placed in an area of suspected traffic. Border Patrol agents said they have enough information to use a system such as this today, placing it in areas proven to be active by sign cutting or other methods. This

system would be a tremendous improvement over the sensors they are now using. If this system were employed in conjunction with predictive intelligence, a dramatic improvement in detection of smugglers/aliens would be possible.

It must be emphasized that this system is not intended to be placed in one location for an indefinite period of time. It is a mobile system designed to be moved to suspected or predicted "hot spots" and then withdrawn when the activity subsides. Because of the relatively short time it is to be employed at any one time or place, it is assumed that law enforcement personnel will be readily available to respond to detected threats. Although camouflage and light armor will protect it to some degree, it is vulnerable to determined vandals, and because of its light weight and small size, could literally be carried away by resourceful adversaries. However, this is considered a highly unlikely scenario given the remote areas in which it will be operated and the rapid response to detected threats.

### **STEPPING BACK...TO THE BIG PICTURE**

In many ways, what we face at the border is analogous to a war between opposing armies. Our failure to approach the narcotics and illegal alien problems from that perspective leads us to devise inappropriate strategies, tactics, command and control organizations and force structures to solve the problems. The two problems are interrelated; both reflect our inability and indeed unwillingness to control our border and hence dictate who and what can pass into our territory. If we had the will to control the border, a way could be found to solve both the narcotics and the illegal alien problem. We have the resources and the appropriate technology to control our frontiers. Once the political will is manifest, we can devise an appropriate strategy linking means and ends. That we have no such strategy now is again a reflection of the absence of a political will to solve the problems. There is a great deal of political rhetoric suggesting that both issues are problems

that need to be resolved, but our collective failure to follow words with actions and resources belies the seriousness of our purpose.

We believe that any strategy short of one designed to control who and what passes across, over, under and around our borders will fail inevitably. Partial solutions can be found to better control our POEs, border town front lines, and to patrol the vast expanses of desert and mountain between the 28 Southwest border ports of entry. However, success on one of these three fronts will only drive our opponents to increase their efforts on one or both of the other two.

For example, if we develop better methods to detect drugs passing through the POEs--perhaps proton scanning devices or chemical detectors--the traffickers will simply divert their efforts to the other fronts. They will stop trying to bring in large drug loads in tractor trailers at the POEs, and will smuggle smaller loads across border town fences or on mules, vehicles and back packers for later consolidation on our side of the line. Likewise, should we make the areas between ports of entry more secure through mobile sensors, the traffickers in drugs and people will concentrate on eluding us in the downtown border cities (as at present) or through the POEs. Alien smugglers will have an incentive to produce improved false documents for their clients or to make more sophisticated compartments in vehicles to hide the illegals. As we make it harder to get drugs or people across any one of the three fronts, the smugglers will simply raise their prices. They might even dig tunnels under the border, as they did several years ago in Douglas. Should we beef up the fences, lighting and ditches in the border towns, the aliens and smugglers will flow to the flanks or POEs, seeking a weaker penetration point.

As long as the incentives for illegal aliens to enter the United States are so great and the demand for drugs remains as high as it has been, then our opponents will have a motive to try to outsmart and defeat our efforts. As long as we refuse to treat either of these interrelated problems as true national security threats, we will

be unable to stem the flows of drugs or aliens through partial, half-hearted measures such as those we now use. While new sensor technology and other scientific advances can help save resources and improve detection and enforcement efforts in any one--or indeed all of the three border "fronts" we have identified--that will not make much of an impact on the broader problem unless we begin treating the problem as a whole and viewing the challenge as akin to a war.

So while any one of the forty-one agencies with border responsibilities can benefit from using new technology, and can justify spending on such equipment from their narrow perspective because of the improvements technology can make to employment of scarce manpower resources, we must recognize that those expenditures will not solve the larger problem. We can win many local battles with traffickers using new technology, but they will win the larger war unless we look at the war from a strategic, not tactical perspective, and try to devise a strategic plan using intelligence, technology and enforcement resources to control our border.

#### **The Question: Will We Control Our Borders?**

Controlling the border, not seizing drugs or catching illegal aliens, is what victory means in the war in which we should be engaged. As in Vietnam, body counts are largely irrelevant as a sign of effectiveness. As we have indicated, we overcount and underestimate the flow of drugs into the United States as each enforcement agency tries to look good to the public and Congress. High visibility tactical battles (called special operations) are staged to demonstrate resolve to our public and the enemy, but these too are largely political "shows" that do not often contribute to solving the problem in any meaningful way and may, in fact, drain off the time, energy, and effectiveness of the less glamorous border enforcement agencies.

As we have shown, Israel is an example of a country that has recognized a need to control its borders from illegal entrants, i.e., terrorists. It has the political will

to accomplish the mission, and thus has found a way to control the border. They have judged that manpower is a scarce and expensive resource and so have looked to technology to solve the problem. The Coastguardian system they are about to employ at their beaches is an example of low cost, effective use of technology to control borders. Ground radars and effective, well maintained fences at the land borders are also examples that the key to border control is political will. Where that exists, the appropriate organizations can be set up and the necessary technological solutions found.

Narcotics and illegal aliens are linked in that the key to both problems lies in control of all of our borders. Resolution of both problems flows from a solution of that problem. Even if one disagrees that illegal aliens are a national security threat, most Americans see drugs as a threat to much of what we hold dear. While illegal aliens rarely are caught with drugs, it remains a fact that drugs cannot walk across the border. Someone must carry them, and very often illegal aliens volunteer because they come to this country because they need money. So the two problems are linked and must be solved by controlling the border.

Deterrence theory helps in explaining why we are making little headway in stopping drugs and illegal aliens from entering the United States. We measure the threat posed by any enemy by calculating his intentions, his capabilities and our vulnerabilities. We try to deter an enemy from attacking what we wish to protect by threatening punishment that will cost him more than he can gain. A strong retaliatory force exists to back up these threats, or a fall back defense system is in place. An opponent considering whether to attack will weigh several factors before deciding; what he hopes to accomplish, i.e., the value of his goals; the costs he can expect given each of our possible range of responses; the probability of each of our responses; and the probability of winning at each of our potential levels of response.

Although deterrence theory is most often applied to nations, it is also a useful way to show why drug and alien traffickers are winning their war with us. From the point of view of the smugglers, our deterrent threats are not credible and our ability to defend and retaliate is weak. Our laws threaten punishment for crossing the line illegally, with or without drugs, but traffickers know that we have neither the inclination nor the means to enforce these laws fully. If we try, they employ minors to carry the drugs, or break down the drug lots into small bundles so that prosecuting attorneys will refuse to indict. Jail sentences, when imposed, are light in comparison with the profits "mules" can make if successful.

Little we do affects the traffickers' inventory of values. For example, if we temporarily stop him from shipping his drugs, then he need only wait; most likely the price of his goods or services will rise concomitantly with our temporary success. When we move resources elsewhere, or slacken our efforts at another point on the border, he will go for that opening. He can afford to be patient and take losses. Rarely does what we do weaken his resolve to try again or his capacity to probe and attack.

Based as they are in a foreign country, the traffickers are not under our control. There have been reports that traffickers receive protection and intelligence from Mexican police and sometimes Mexican political authorities. The Mexican government has no incentive and many disincentives to stopping their citizens from entering the United States, but they do have incentives for ending or controlling drug trafficking. Mexicans remit billions of dollars to their country annually, money that the Mexican economy needs. Much of the drug money too stays in the Mexican economy, much of it with the poor farmers who grow the marijuana and the opium poppies.

Whereas deterrent theory contemplates one set of political and military actors on the other side, in our case we face hundreds or thousands of separate "wills"

that we are trying to influence and deter. Even if our laws and enforcement agencies deter some of these organized smuggling groups, most will not find our threats and defenses very credible. Hence, the costs of their occasional failures are low relative to the potential monetary gains from continuing. As he makes his cost-benefit calculations, the smuggler recognizes that it is improbable that anything we do will shut him down, especially since he has many people willing to smuggle drugs across the border and enjoys sanctuaries in Mexico. The probability of “winning” is high no matter what surprises we might spring on him in the way of new defenses.

Seen in another light, the traffickers know that we are refusing to “go to war” in the face of their provocations. A smuggler makes his cost-benefit calculations over the whole war, and sees he will emerge a winner even if he loses an occasional battle (drug or alien load). Our threat to seize a high value drug load whose cost to him is moderate, even if this were highly probable, may not deter him if he places high value on getting the drugs across the border and he has a good chance of success.

The smuggler sees that we are unwilling to fight the war, that our defenses are weak and permeable, and that we do not escalate after our deterrence fails. Therefore, we are not influencing the mind of the enemy. He remains a threat because his intentions are strong, his capabilities better than ours, and our vulnerabilities legion.

Rationally, we should decide on a response to the smuggling challenge that minimizes our costs and maximizes our chances of success over the “whole war.” But we are not doing this. We know deterrence has failed, but have not beefed up our defenses in response. Rather, as we have done so often in the past, we step up our declaratory threats, look for spectacular tactical victories, occasionally

proclaim discovery of "signs of progress", and reduce our defense expenditures. This is no way to win a war, even if it is good politics.

At the tactical level we have failed to analyze the battlefield we are theoretically trying to defend. That battlefield ranges in depth from several feet in the cities to up to a hundred miles in rural areas. Time enters the equation, since the enemy "wins" if he makes it to a road or safe haven before we can detect or apprehend him. What is the territory whose loss would most hurt the smugglers' ability to make his next moves? Given the "thinness" of the battlefield at the POEs and the border towns, we believe these must be defended first and denied the enemy. The concept of defense we have advocated calls for us to hold the border towns and POEs while flushing the enemy into the rural wastelands where we can more leisurely use new sensor technology to detect and grab the intruders. The enemy concept is to flood the POEs and border town areas, disperse his loads, travel by night, accept casualties, be creative, and use surprise, deception and intelligence.

Can we thwart these plans and deny territory to the traffickers? We believe our denial forces are not sufficient to stop an opponent who has shown he will not be deterred. While we have temporarily denied the air to him using air defenses, we have not done so on the other two fronts. We must abandon illusions of our deterrent ability and instead concentrate on denying all the border to our opponents. Even with our current divided command and control, and with our intelligence deficiencies and manpower shortages, technology can help improve our chances of controlling the border eventually. Technology, not massive use of brawn, is a key factor that has enabled us to prevail in past wars. Should we ever agree to fight the drug and illegal alien wars, we can prevail too using technology.

If we want to win this war, we will pay a high price in terms of our political relations with Mexico. Mexico needs an open border to help solve its problems. In a sense, such a war would be a zero sum game in which our successes would be



their losses. Currently Mexico refrains from criticizing our counternarcotics and anti-smuggling efforts, except when violence against Mexicans ensues or prompt consular access is denied to apprehended aliens. Mexican political leaders claim that it is our sovereign right to protect our border. Of course they realize that such declarations cost them nothing when we are not defending our borders and show no signs of wanting to do so. However, they do oppose what they call "militarization" of the border. While they accept the present decrepit fences, they do not want to see anything more effective erected in their place, or ditches dug. They would raise a diplomatic hue and cry were we to post armed soldiers on the border. (So would many Americans in border communities.)

Initially, it would be difficult for the Mexicans to oppose better border sensors, especially if they were ostensibly aimed at detecting drug traffickers. After all, the Mexicans proclaim drugs are a national security threat to them and they say they are cooperating with us fully. The sensors do not "cross" the Mexican border and are not something categorically new or more "military." But if they are employed as part of an integrated plan to control our border, and not as an enhancement to operations in just one border sector, the Mexicans will be pressured to complain by their citizens and our border communities. Merchants in Nogales, Yuma and Douglas will howl that their business is drying up and Mexicans on the other side will raise charges of discrimination. Why are the sensors not being placed on the Canadian border, they will ask. They will claim that the sensors are unfriendly and a sign of hostility towards Mexicans.

Our political and economic leaders will eventually have to face up to the question of whether we want to control our borders and have a say in who or what crosses. We have not had to make that decision yet. Improved sensors and better POE technology used in an integrated border control network will force Americans to decide whether aliens (and in what numbers) and drugs should be allowed to cross.

When we can better determine what is crossing, we will be able to stop the flows. Technology may force a political decision as to the diplomatic and other costs we are willing to pay to win the war.

In view of the current political, economic and cultural restraints, we do not believe this nation is willing to fight the Southwest border problems as we should if we want to "win". Nevertheless, we will make some recommendations as to how new technology should be used at the agency--i.e., tactical--level. Such technology can help stretch manpower and in general make better use of existing structures and resources.

### **RECOMMENDATIONS**

Stationary sensors have an important role to play in helping the Border Patrol accomplish its dual anti-narcotics and illegal alien missions. They have already proven their worth in economizing and stretching Border Patrol manpower resources. More and better stationary sensors are needed however. The Tucson Border Patrol sensor experts are very unhappy with the new sensors purchased for them over the past few years. Reportedly these devices have been defective technically. Reliable sensors are available in the market and should be tested and eventually purchased. The Tucson border sector would be a good place to test these devices since it appears large amounts of narcotics are smuggled through it from Mexico. The terrain in the area is varied and would help the Border Patrol test the suitability of sensors for general use along all our borders. We suggest that companies wishing to sell new sensors be required first to test them for reliability and discrimination ability under Tucson Border Patrol supervision. Immigration and Naturalization should not purchase any new sensors that have not first been thoroughly tested and blessed by the field agents who must ultimately use them and trust in their efficacy.

The Immigration and Naturalization Service should also order and test a prototype Unmanned Ground Vehicle. The stationary sensors will provide the first and primary line of detection, but UGVs have a supplementary role to play where the terrain allows for their deployment. They provide the flexibility now lacking in the sensor program and can be moved rapidly to "hot spots" in response to tactical intelligence information. The costs to develop a UGV of the type we have discussed earlier is surprisingly low, especially in comparison with its capabilities. The UGVs should be kept as simple as possible. Special maintenance tools, good calibration, adequate parts and simple communications will help hold maintenance costs to a minimum. The more redundant communications systems on the UGV, the greater the costs. There are major trade-offs between communications costs and capabilities.

The Department of Defense, through the Joint Program Office at Huntsville, Alabama, could and is willing to build a prototype UGV containing an array of high technology sensors and day-night television cameras at its facilities. A model could be constructed on a Honda-type All Terrain Vehicle in a short period of time. Again, we recommend that the UGV be field tested in Tucson with local Border Patrol agents making a final recommendation whether the UGV will help them in their work, and what sensors it should contain. It is our belief that a UGV will be found helpful in detecting narcotics traffickers. Its low light television cameras should be sensitive enough to detect traffickers carrying weapons at night. That capability alone will make the cost reasonable, since narcotics traffickers increasingly can be expected to carry weapons and use them if the Border Patrol clamps down on drug flows in the Tucson area. If a UGV system is eventually procured, operational control should remain at the sector level. Sector intelligence should decide when and where the system would be used.

A fully functioning secure communications system is critically needed in Tucson. The Defense Communications Agency is providing assistance in installing the necessary equipment. Without such a system drug traffickers will be able to monitor Border Patrol activities and probably discover where new sensors and UGVs are deployed, thus avoiding the detection devices. Secure communications are also needed to allow Border Patrol sector headquarters to pass sensitive intelligence information to stations and agents in the field. That information is beginning to be compiled in sector data bases and will be shared among Southwest border sectors in the near future. Such data transfers will be impossible unless operational security is ensured. Regardless of whether Operation Alliance or EPIC maintains a future Border Patrol central tactical intelligence data base, secure communications links will be required. According to patrol agents we consulted, currently traffickers and others are monitoring Border Patrol radio messages and trying to determine the frequencies they utilize. As more sensitive messages are passed in the future, eavesdropping will be more damaging to Border Patrol operations and security.

Today, the Border Patrol's capacity to operate in the dark is limited by the lack of night vision equipment. DoD should assist the Border Patrol in procuring current "state of the art" night vision devices. If the UGV system proves as effective as we expect it will, the number of night time detections of drug traffickers and illegal aliens should increase significantly. Night vision devices will enable the agents to see what they are facing when they respond to UGV or static sensor "hits." Thermal binoculars are inexpensive and available on the market. Additionally, each station should acquire portable Global Positioning Sensors (GPS) so that agents operating at night can accurately determine their location and allow station officials to track them during night operations.

We do not recommend purchasing Remotely Piloted Vehicles. They are very expensive and manpower intensive. The disadvantages of RPVs outweigh any

advantages they have in this relatively peaceful area of the "Drug War." Forward looking Infrared (FLIR) systems which are currently mounted on Border Patrol helicopters could provide the required capability for night operations if coupled with the use of night vision goggles (NVGs). To operate with NVGs safely and effectively would require the same training the U.S. Army gives its attack helicopter pilots. Current manning levels are insufficient for the continuous night operations required for pilots to maintain the proficiency needed to safely operate under these conditions. Increasing manning, providing the NVG training, and coordinating the aircraft missions with the use of the UGVs and other sensors would provide a significant increased capability for the Border Patrol.

No agency is coordinating the identification, testing and procurement of new technologies for border narcotics interdiction and detection. Dozens of agencies are going their separate ways, each looking to parts of the military to give guidance on what is available in new technology and what it should buy. The Immigration and Naturalization Service should suggest that the National Drug Control Policy Office convene a meeting of counternarcotics agencies to find ways of avoiding costly and wasteful duplication in this field. Perhaps an ad hoc committee of research and development officials from all the agencies operating on the border (federal, state and local) should be established to discuss the problem of duplication. It could share experiences, discuss technological advances and hold joint meetings with contractors and manufacturers.

## **CONCLUSION**

Modern technology has an important, enhanced role to play in the war on drugs on the Southwest border. Improved sensors, better television cameras, thermal devices, secure communications and new scanning devices to detect drugs in vehicles can all contribute to more effective use of scarce law enforcement manpower at the border. This study has suggested how new sensors and other high technology equipment can be employed on the Southwest border. While we believe more and better technology has a key role to play in the interdiction aspects of the war on drugs, in our opinion, high technology alone is no panacea. There are no easy solutions. This country must tackle the three interrelated parts of the narcotics problems at the same time: demand, production and interdiction. The United States must reduce its demand for drugs, work with foreign governments that are fighting powerful drug organizations in their societies, while at the same time improving interdiction efforts.

Organizational deficiencies, duplication of effort, intelligence gaps, command and control problems, and insufficient funding all lessen the effectiveness of our drug interdiction efforts. Resolving these administrative and financial problems will be necessary if the United States is to make progress in stemming the steady flow of drugs into the country. Above all, our citizens will have to decide whether they really want their elected officials and law enforcement agencies to conduct a "war on drugs"; so far the politicians that represent them are not convinced the public will consent to pay the taxes required to conduct more than an occasional counternarcotics skirmish or battle. Until that happens we can never hope to beat the traffickers. Our government also must adopt a total border control strategy; the present piecemeal approach just encourages resourceful traffickers to penetrate the weak spots while ignoring the tough defenses.

Law enforcement agencies recognize that they have obsolete technology and that the private sector probably has developed high technology equipment that can help them in their work. However, for the most part these law enforcement officials are unaware of just what new on-the-shelf technology is available. There is no central federal office that can help them locate this technology or assess its adequacy for counternarcotics operations. Likewise, they have difficulty in finding out about what the United States military is developing that might be applicable to their work. Much of our new military equipment--particularly in the sensor field--can assist law enforcement personnel improve their efficiency. The Department of Defense, operating over 40 research laboratories, should be able to find ways to work with civilian counternarcotics agencies to develop and test appropriate new technologies with dual military-law enforcement capabilities. Sharing of knowledge and experience, as well as equipment and experts through existing Joint Task Forces, can serve as important, immediate Defense Department contributions to the Southwest border "war on drugs."